

Amendments to the Specification

1. Please amend the paragraph that begins on line 3 of page 5 to line 19 of page 5 as follows:

It is an advantage of the present invention that the end pulse of each contact image sensor is for triggering another contact image sensor, which is adjacently and operatively connected to the former contact image sensor, thereby, scanned image signals generated from all contact image sensors over periods of their document reading sessions are outputted sequentially. Still, in the case of not having the end pulse serve as another start pulse of another contact image sensor, the present invention further includes an analog switch having an internal counter therein, not only for receiving the scanned signals from these contact image sensors but also selecting and outputting these received scanned image signals in a sequential manner. A software module or application is provided for integrating the sequentially outputted scanned image signals in the case of having a large-sized document scanned. As to the double-sided document scanning, the present invention optical scanner further provides two series of contact image sensors, one of which is disposed horizontally oppositely with respect to the other one and both of which are operated sequentially. Thus, the present invention optical scanner is able to deal with the large-sized document even it is in double-sided form.

2. Please insert on line 16 of page 6 the following paragraph:

Fig. 8A shows a double-sided document being scanned by two image sensing modules facing towards each other; and

Fig. 8B shows that two sequential output scanned signals from the two image sensing modules of Fig. 8A are processed to produce two respective images of the two sides of the document being scanned.

3. Please amend the paragraph that begins on line 26 of page 7 to line 18 of page 8 as follows:

It appears that the multiple-channel A/D converter 208 receives these scanned image signals in a sequential manner, given these scanned image signals are outputted in the same sequential manner. Scanned image signals outputted from corresponding contact image sensors 2021, 2022 and 2023 are analog-based, and the multiple-channel A/D converter 208 is to convert these analog-based scanned image signals into their digitalized forms. Thereafter, these digitalized scanned image signals are then processed by a digitalized image processor 211 and then transferred through an interface 213, such as an USB-based one, to outside computers for further processing. The computer may include an image processing module or software module or application, for integrating these scanned image signals outputted from the digitalized image processor 211. While the document is not of the normal standard size, the optical scanner 200 according to the present invention requires at least two document reading sessions, provided each contact image sensor is capable of dealing with the standard size (in terms of width) document, to output scanned image signals sequentially to the multiple-channel A/D converter 208. These sequentially outputted scanned image signals are also outputted to the digitalized image processor 211 in the same sequential manner. After the software integrating these two scanned image signals together, the final outcome of the scanning of the not-standard-size document will be generated.

4. Please amend the paragraph that begins on line 5 of page 12 to line 5 of page 13 as follows:

FIG. 7B shows the operation of the optical scanner in FIG. 6. Unlike its counterpart in FIG. 5, the optical scanner in FIG. 6 employs no use of end pulses. Start pulses generated from the timing generator are for triggering contact image sensors to perform their own document reading sessions and then output scanned image signals as these document reading sessions are finished. Outputted scanned image signals are transferred to analog switch, where these scanned image signals are selected and then outputted to A/D converters. Before having scanned image signals selected, A/D converter has received all necessary scanned image signals consisting of an entire document, regardless of its size. Therefore, while the first one

selection signal 603 is generated, the first scanned image signal 604 will be selected to be outputted; another selection signal like 606 will be generated to select and output the second scanned image signal 608, after a predetermined period of time 609 (preferably, several pixel clocks) counting from the toggle of the first selection signal 603; thus, the scanned image signals are outputted sequentially, given another (the third) selection signal (pulse) 611 will be generated after another predetermined period of time counting the toggle of the second selection signal (pulse) 606, in order to select and output the third scanned image signals. In summary, whether with the analog switch or not, the optical scanner according to the present invention outputs scanned image signals sequentially in the cases of normal (standard) or large-sized document scanning. Even as dealing with the case of a double-sided document, the optical scanner of the present invention includes two contact image-sensing modules having a plurality of contact image sensors operatively connected in series as shown in Fig. 8A where two image sensing modules are disposed facing towards each other to scan both sides of a document 802 between the two modules, one of which is disposed horizontally with respect to the other one. Contact The two image-sensing modules operate sequentially to produce a signal 810 including signs from both of the two image-sensing modules as shown in Fig. 8B, as contact image sensors thereof operate in a sequential manner as well. The aforementioned software may be able to integrate sequentially outputted scanned image signals, which are digitalized at the present stage, to generate a complete image (i.e., both sides 812 and 814) of the original document.